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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/679,103

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David J. Danitz

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EXAMINER

NGUYEN, TUAN VAN

ART UNIT

PAPER NUMBER

3731

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/679,103

Applicant(s)

DANITZ ET AL.

Examiner

Tuan V. Nguyen

Art Unit

3731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 50-68 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 50-68 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 50-68 are pending in this application. Claims 50-68 were examined and rejected in previous Office Action.

Response to Applicant's Arguments

2. Applicant's arguments filed on July 5, 2007 with respect to claim 68 have been fully considered but they are moot in view of new ground of rejection.
3. The terminal disclaimer filed by the applicants on July 5, 2007 has been approved by the Office, therefore, the double patenting in previous Office Action is hereby withdrawn.
4. Applicant's argument with respect to that modify the flat surface of the socket member 18 of Madocks reference to a convex surface is not a matter of design choice because the difference is not a trivial difference, nor is it a matter of obvious design choice have been fully considered but they are not persuasive. Figure 1 of Madock's drawings clearly discloses the socket 16, 18 has a bevel angle B (see col. 5, line 45) and the socket 18 or second beads 18 contact adjacent ball 12 or first beads 12 along the bevel angle B, thus the contact between first beads 12 and second beads 16, 18 is **a line of contact** at the tangent points indicated at "P" (see col. 2, lines 20-35 and col. 5, line 45). According to Figure 1, changing the magnitude of angle B (angle B equal to angle a) will change the location of contact point "P". Madocks also discloses that the

joint stiffness is proportional to friction force and friction force is proportional to normal force therefore changing the angle A and friction force results in increasing or decreasing joint stiffness (see col. 3, lines 35-45), however, the magnitude of angle A is depend on the contact location "P", therefore, varying the bevel angle B the stiffness of the joint can be controlled (see col. 5, lines 45-50). Therefore, it would have been obvious to one of ordinary skill in the art to design the contact surface of the socket 18 as a bevel surface as shown in Fig. 1 of Madocks reference or to design the contact surface of the socket 18 with the convex surface because convex surface and bevel surface still provide **a line of contact** between the ball 12 and socket 18.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claim 68 is rejected under 35 U.S.C. 102(b) as being anticipated by Madocks et al (U.S. 4,949,927).**
7. Madocks et al show (see Figs. 1 and 2) an articulate column, which is capable for use with a clamp device, having a shaft assembly comprising an articulate column. The articulate column comprises alternating first beads 12 and second beads 16, 18. The second beads 16, 18 have a larger inner diameter than the first beads and

each of the second beads is supported on the outer surface of the first beads 12 wherein the second beads 16, 18 contact adjacent first beads 12 along the bevel angle B, thus the contact between first beads 12 and second beads 16, 18 is a line of contact (see col. 2, lines 20-35 and col. 5, line 45).

8. As to the recitation that the shaft is for use with a clamp device, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

Art Unit: 3731

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
11. **Claims 50-60 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Madocks et al (U.S. 4,949,927) in view of Madocks et al.**
12. Referring to **claims 50-52, 55-57, 60 and 68**, Madocks et al show (see Figs. 1 and 2) an articulate column, that is capable for use as a shaft with a surgical clamp device, comprises alternating first beads 12 and second beads 16, 18. The second beads 16, 18 have a larger inner diameter than the first beads and each of the second beads is supported on the outer surface of the first beads 12 wherein the second beads 16, 18 contact adjacent first beads 12 along the bevel angle B, thus the contact between first beads 12 and second beads 16, 18 is a line of contact (see col. 2, lines 20-35 and col. 5, line 45). Madocks also discloses that varying the bevel angle B of each socket or second beads, the stiffness of each joint can be controlled because the frictional force between the first beads 12 and second beads 16, 18 depended in value of the bevel angle, thus the stiffness of the column can be controlled (see col.2, lines 23-30 and col. 5, lines 45-50).
13. Still referring to **claims 50-52, 55-57, 60 and 68**, Madocks discloses that the contact between first beads and the second beads is a line contact and the stiffness of the column or shaft can be control by the bevel angle B. However, Madocks does not specifically disclose the bevel surface of the socket or second beads is a convex surface. Therefore, it would have been an obvious a matter of design choice to one of ordinary skill in the art to design the bevel surface of the

Art Unit: 3731

- socket 16, 18 or beads 16, 18 to a convex surface because the contact between the first beads 12 and second beads 16, 18 at the bevel angle B still a line contact.
14. As to the recitation that the shaft is for use with a clamp device, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.
15. Referring to **claims 53, 54, 58, and 59**, Madocks does not show the second beads has a smaller outer diameter than each of the first beads or has the same outer diameter as each of the first beads. Therefore, it would have been an obvious matter of design choice to one of ordinary skill in the art to design an outer diameter of the second beads smaller than the first beads or same with each of the first bead since such a design does not solve any stated problem.
16. **Claims 61-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cosgrove, III et al (U.S. 6,139,563) and further in view of Madocks et al (U.S. 4,949,927).**
17. Referring to **claims 60-64 and 67**, Cosgrove III et al show a clamp comprising a handle assembly 12, a gripping assembly 16 having a pair of jaws 48 and a shaft assembly 14. The shaft assembly has a flexible shaft, wherein the shaft having a proximal end coupled to the handle assembly and a distal end coupled to the gripping assembly. The flexible shaft defines a bore and comprises a plurality of beads 38. A cable 31 extends through the bore and has a proximal end coupled to

the handle assembly and a distal end coupled to the gripping assembly. Cosgrove, III et al do not show the beads comprising alternating first and second beads wherein the second beads have a larger inner diameter than the first beads and each of the second beads is supported on the surface of the two adjacent beads at a line of contact and each of the second beads has a convex shape at the line of contact. Madocks et al show (see Figs. 1 and 2) an articulate column, that is capable for use with a clamp device, having a shaft assembly comprising an articulate column. The articulate column comprises alternating first beads 12 and second beads 16, 18. The second beads 16, 18 have a larger inner diameter than the first beads and each of the second beads is supported on the outer surface of the first beads 12 wherein the second beads 16, 18 contact adjacent first beads 12 along the bevel angle B or, thus the contact is a circular line of contact (see col. 2, lines 20-35 and col. 5, line 45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the bead formation of Cosgrove, III et al with the modified bead formation taught by Madocks, because this will provide a greater range of stiffness along the length of the shaft as suggested by Madocks.

18. Referring to **claims 65 and 66**, Madocks nor Cosgrove do not show the second beads has a smaller outer diameter than each of the first beads or has the same outer diameter as each of the first beads. It would have been an obvious design choice to one of ordinary skill in the art to design an outer diameter of the second

Art Unit: 3731

beads smaller than the first beads or same with each of the first bead since such a design does not solve any stated problem.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan V. Nguyen whose telephone number is 571-272-5962. The examiner can normally be reached on M-F: 9:00 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anh Tuan Nguyen can be reached on 571-272-4963. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tuan V. Nguyen

September 17, 2007


ANH TUAN T. NGUYEN
SUPERVISORY PATENT EXAMINER
9/17/07